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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,241	03/24/2004	Takashi Kobayashi	250764US6	4521

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EXAMINER	
TRAN, THANG V	
ART UNIT	PAPER NUMBER
2627	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/807,241	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Thang V. Tran	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-14* is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☒ Claim(s) *6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Objections – 37 CFR 1.75(a)

1. Claims 1 and 2 are objected to under 37 CFR 1.75(a) for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "the optical-axial direction" in claim 1, lines 8- 9, should be changed to --an optical-axial direction--; otherwise, it lacks antecedent basic.

The term "the latter" in claim 2, line 3, lacks antecedent basic. Also, it is unclear what the statement "read from the latter" as recited in this claim means.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto et al. (US 5,511,050).

Regarding claim 1, see Fig. 1 or 11 of Matsumoto et al which discloses an optical pickup device (see Fig. 1 as example) comprising: a light source (21) that irradiates light to an optical recording medium (30); a focusing means (28) for focusing the light emitted from the light source on the optical recording medium; a diffraction means (24) provided between the light source and focusing means to diffract the light emitted from the light source so that zero-order light (25a) resulted from the diffraction is focused (see focus point 29a) by the focusing means (28) on the optical recording medium while other diffracted light (25b, 25c) than the zero-order light goes to a focus (see focus points 29b and 29c) shifted in the optical-axial direction not

to be focused on the optical recording medium; and a light detecting means (33a-33b) for detecting a portion, reflected from the optical recording medium, of the zero-order light from the diffraction means.

Regarding claim 4, see Fig. 11 which shows the use the diffraction means (see grating 3) is disposed near the light source; and divergent light emitted from the light source is incident upon the diffraction means.

4. Claims 1, 4 and 7 rejected under 35 U.S.C. 102(b) as being anticipated by Higashiura et al (US 6,167,017).

Regarding claim 1, see Figs. 1A-3B of Higashiura et al which discloses an optical pickup device comprising: a light source (2) that irradiates light to an optical recording medium (4); a focusing means (3) for focusing the light emitted from the light source on the optical recording medium; a diffraction means (5) provided between the light source and focusing means to diffract the light emitted from the light source so that zero-order light (b) resulted from the diffraction is focused (see Fig. 3B) by the focusing means (3) on the optical recording medium while other diffracted light (a and c) than the zero-order light goes to a focus shifted in the optical-axial direction not to be focused on the optical recording medium (see Fig. 3B); and a light detecting means (20, 30) for detecting a portion, reflected from the optical recording medium, of the zero-order light from the diffraction means.

Regarding claim 4, see Fig. 1A which shows the use the diffraction means (see grating 5) is disposed near the light source; and divergent light emitted from the light source is incident upon the diffraction means.

Regarding claim 7, see Fig. 1B which shows grating 5 is a phase-modulated type diffraction grating.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (US 5,511,050) or Higashiura et al (US 6,67,017) in view of Maeda et al (US 6,628,599).

Matsumoto et al., according to Fig. 1 and Higashiura et al., according to Figs. 1A-3B, each discloses all the features of the instant claimed invention (see the rejection above) except for the use of diffraction means varies the efficiency of light utilization depending upon whether signals are to be written to the optical recording medium, as further recited in claim 2, or the diffraction means varies the efficiency of light utilization depending upon the type of the optical recording medium as further recited in claim 3, or the diffraction means is formed from a transparent optical material with transparent electrodes, the transparent optical material having the birefringence thereof varied when a voltage is applied across the transparent electrodes, to thereby make optical modulation of the diffraction efficiency as further recited in claim 5. Maeda et al, according to Figs. 2A-2D, teaches that a diffraction means can be formed from a transparent optical material with transparent electrodes, the transparent optical material having the birefringence thereof varied when a voltage is applied across the transparent electrodes

thereby to adjust the diffraction efficiency for recording or reproducing information on various kinds of recording media. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical pickup device of either Matsumoto et al or Hugashiura et al by replacing the diffraction grating with a diffraction grating that is formed from a transparent optical material with transparent electrodes having the birefringence thereof varied when a voltage is applied across the transparent electrodes in order to adjust the diffraction efficiency in order to perform recording or reproducing information on various kinds of recording media, and thereby to make the optical pickup device more compatible.

Allowable Subject Matter

7. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 6 is allowable over the prior art of record because the prior art of record, considered alone or in combination, fails to suggest or fairly teach an optical pickup device including a diffraction means uses an acousto-optical element formed from a transparent optical material with an oscillating means, the transparent optical material having the birefringence thereof varied when the oscillating means generates ultrasound, to thereby make optical modulation of the diffraction efficiency, as specifically recited in this claim 6.

8. Claims 8-14 are allowed over the prior art of record, considered alone or in combination, fails to suggest or fairly teach an optical disk drive including a combination of: a light source that irradiates light to an optical recording medium; a focusing means for focusing the light emitted from the light source on the optical recording medium; a diffraction means provided

between the light source and focusing means to diffract the light emitted from the light source so that zero-order light resulted from the diffraction is focused by the focusing means on the optical recording medium while other diffracted light than the zero-order light goes to a focus shifted in the optical-axial direction not to be focused on the optical recording medium; a light detecting means for detecting a portion, reflected from the optical recording medium, of the zero-order light from the diffraction means; and a write/read control means for controlling the output of reading or writing light from the light source and the diffraction efficiency of the diffraction means, as particularly recited in claim 8. Claims 9-14 are allowed with their respective parent claim.

Cited References

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references relate to an optical apparatus having a grating for diffracting a light beam from a light source into a plurality of beams and ab objective lens for focusing the plurality of beams at different focus positions onto a recording medium.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thang V. Tran whose telephone number is (571) 272-7595. The examiner can normally be reached on M-F 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Hoa can be reached on (571) 272-7579.. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thang V. Tran
Primary Examiner
Art Unit 2627